

Amendments to the Claims

A complete list of pending claims follows, with indicated amendments:

1. (Original) A method for correlating the execution throttle levels of the servers of a network to the command queue depth of the storage controllers in the network, each of the storage controllers managing one or more logical storage units, comprising the steps of:

identifying the servers of the network;

identifying the logical ownership of each logical storage unit on the network;

verifying that a rule governing the command throughput of the servers and storage controllers of the network is satisfied, the rule defining a relation between the execution throttle levels of the servers of the network and command queue depth of the storage controllers of the network; and

adjusting the execution throttle level of at least one server of the network in response to a determination that the rule was not satisfied.

2. (Previously Amended) The method of claim 1, wherein the rule provides that, for each storage controller of the network, the sum of the execution throttle levels of the servers having logical ownership over a LUN of the storage controller does not exceed the command queue depth of the storage controller.

3. (Previously Amended) The method of claim 2, wherein the step of adjusting the execution throttle level of at least one server comprises the step of decrementing the execution

throttle level for a selected server that is associated with a storage controller for which the rule was not satisfied.

4. (Cancelled).

5. (Previously Amended) The method of claim 3, wherein the selected server is the server that has the highest execution throttle among the set of servers associated with the storage controller for which the rule was not satisfied.

6. (Cancelled).

7. (Withdrawn) The method of claim 3, wherein the selected server is the server that has the highest input/output demand among the set of servers associated with the storage controller for which the rule was not satisfied.

8. (Cancelled).

9. (Original) The method of claim 3, wherein the selected server is selected according to a round robin format.

10. (Previously Amended) The method of claim 5, further comprising the step of repeating the verifying and adjusting steps until the sum of the execution throttle levels for the

servers associated with a storage controller for which the rule was not satisfied does not exceed the command queue depth of the storage controller.

11. (Original) The method of claim 10, further comprising the step of determining whether the execution throttle of each server exceeds a minimum execution throttle setting.

12. (Original) The method of claim 11, wherein the verifying and adjusting steps are automated.

13. (Previously Amended) The method of claim 12, further comprising the step of setting each server such that each server is operating at its respective maximum execution throttle level prior to performing the first of the verifying and adjusting steps.

14. (Original) A storage area network, comprising:
a plurality of servers within the network, each server having an execution throttle;
a plurality of storage controllers coupled to the network, each storage controller having a command queue depth, and each storage controller managing one or more logical storage units;

wherein the execution throttle level of each server is set such that the execution throttle of each server is correlated to the command queue depth of each storage controller.

15. (Previously Amended) The storage area network of claim 14, wherein the correlation of the execution throttle levels of each server to the command queue depth of each

storage controller is governed by a rule that, for each storage controller of the network, the sum of the execution throttle levels of the servers having logical ownership over a LUN of the storage controller does not exceed the command queue depth of the storage controller.

16. (Previously Amended) The storage area network of claim 15, wherein the execution throttle level of the servers may be adjusted such that the sum of the execution throttle levels of the servers associated with a storage controller for which the rule was not satisfied does not exceed the command queue depth of the storage controller.

17. (Previously Amended) The storage area network of claim 16, wherein the execution throttle level of the servers of the storage area network may be adjusted and verified repeatedly until the sum of the execution throttle level of the servers associated with a storage controller for which the rule was not satisfied does not exceed the command queue depth of the storage controller.

18. (Original) The storage area network of claim 17, wherein the execution throttle level of each server further exceeds a minimum execution throttle level.

19. (Original) The storage area network of claim 18, wherein the adjustment and verification of execution throttle level is automated.

20. (Previously Amended) The storage area network of claim 19, wherein the execution throttle level of each server is set to a respective maximum level prior to adjusting or verifying the execution throttle levels of any of the servers of the storage area network.

21. (Original) A method for setting the execution throttle levels of a plurality of servers in a storage area network, the storage area network including a plurality of storage controllers, each of the storage controllers having associated therewith one or more logical storage units, comprising the steps of;

identifying for each storage controller the servers that logically own each of the logical storage units managed by the storage controller;

summing, for each storage controller, the execution throttle levels of the servers that are identified as owning the logical storage units managed by the storage controller;

determining, for each storage controller, whether the summed execution throttle level exceeds the command queue depth of the storage controller; and

if the summed execution throttle level exceeds the command queue depth, adjusting the execution throttle level of one or more of the servers of the storage area network.

22. (Previously Amended) A method for correlating the execution throttle levels of the servers of a network to the command queue depth of the storage controllers in the network, each of the storage controllers managing one or more logical storage units, comprising the steps of:

identifying the servers of the network;

identifying the logical ownership of each logical storage unit of the network;

providing independent server execution throttles for each storage controller that is accessed by the servers;

verifying that a rule governing the command throughput of the servers and storage controllers accessed by the servers is satisfied, the rule defining, for each storage controller, a relation between the independent execution throttle levels of the servers associated with the storage controller and the command queue depth of the storage controller; and

adjusting the independent execution throttle level of at least one server in response to a determination that the rule was not satisfied.

23. (Previously Amended) The method of claim 22, wherein the rule provides that the sum of the independent execution throttle levels of the servers associated with a storage controller does not exceed the command queue depth of the storage controller.

24. (Original) The method of claim 23, wherein the step of adjusting the independent execution throttle level of at least one server comprises the step of decrementing the independent execution throttle level for a selected server that is associated with the storage controller for which the rule was not satisfied.

25. (Original) The method of claim 23, wherein the step of adjusting the independent execution throttle level of at least one server comprises the step of incrementing the execution throttle level for a selected server that is associated with the storage controller for which the rule was not satisfied.

26. (Previously Amended) The method of claim 24, wherein the selected server is the server that has the highest independent execution throttle among the set of servers associated with the storage controller for which the rule was not satisfied.

27. (Cancelled).

28. (Previously Amended) The method of claim 25, wherein the selected server is the server that has the highest command throughput among the set of servers associated with the storage controller for which the rule was not satisfied.

29. (Cancelled).

30. (Original) The method of claim 24, wherein the selected server is selected according to a round robin format.

31. (Previously Amended) The method of claim 26, further comprising the step of repeating the verifying and adjusting steps until the sum of the independent execution throttle levels for the servers associated with a storage controller for which the rule was not satisfied does not exceed the command queue depth of the storage controller.

32. (Original) The method of claim 31, further comprising the step of determining whether the independent execution throttle of each server exceeds a minimum execution throttle setting.

33. (Original) The method of claim 32, wherein the verifying and adjusting steps are automated.

34. (Previously Amended) The method of claim 33, further comprising the step of setting the independent execution throttle level of each server to a respective maximum level prior to performing the first of the verifying and adjusting steps.